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23.1 Definitions

In this Part

"derrick" means a stationary or portable structure used to support the hoisting and lowering mechanism on a rig;

"flow piping system" means a temporary or portable system of piping and other component parts, including valves and fittings, that is

(a) located above ground, and

(b) for use to convey to or from a wellhead a liquid under pressure, or a gas under pressure, during drill stem testing, swabbing, cementing, well

servicing or well stimulation;

"hot work" means work which involves burning, welding, riveting, grinding, using fire or spark producing tools, or other work that produces a source of ignition;

"lower explosive limit" means the minimum concentration of combustible gas or vapour in air, expressed as a percentage by volume, that will ignite if a source of ignition is present;

"rig" includes a derrick and all equipment that is directly involved with drilling or servicing a well;

"well" means an opening in the ground which

(a) is made or being made by drilling, boring, or in any other manner

(i) for the purpose of obtaining oil, gas or crude bitumen or from which any oil, gas or crude bitumen is obtainable,

(ii) for the purpose of developing or using a reservoir for the storage of natural gas, or

(iii) for the purpose of obtaining geothermal energy,

(b) is made or being made by drilling or boring for the purpose of obtaining water to inject into an underground formation,

(c) is used, drilled or being drilled for the purpose of injecting gas, air, water, or other substance or a form of energy into an underground formation,

(d) is an evaluation well,

(e) is a test hole, or

(f) is drilled or being drilled to a depth of more than 600 m (2 000 ft) to obtain geological or geophysical information.

[Amended by B.C. Reg. 258/2008, effective January 1, 2009.]

[Amended by B.C. Reg. 142/2017, effective August 1, 2017.]

23.2 Application

23.2 This Part applies to

(a) the exploration for oil, gas, crude bitumen, or geothermal energy,

(b) drilling, operating and servicing a well,

(c) producing, distributing and refining oil, gas, crude bitumen or geothermal energy from a well, and

(d) ancillary processes associated with paragraphs (a) to (c).

23.3 Other legislation

Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

23.4 Coordination of multiple employer workplaces

(1) If an activity involves the work of 2 or more employers or their workers, each employer must notify the owner, or the person engaged by the owner to be the prime contractor, in advance of any undertaking likely to create a hazard for a worker of another employer.

(2) If a work location has overlapping or adjoining work activities of 2 or more employers that create a hazard to workers,

(a) the owner, or if the owner engages another person to be the prime contractor, then that person, must

(i) appoint a qualified coordinator for the purpose of ensuring the coordination of health and safety activities for the location, and

(ii) provide up-to-date information as specified in subsection (4) readily available on site, and

(b) each employer must give the coordinator appointed under subsection (2)(a)(i) the name of a qualified person designated to be responsible for that employer's site health and safety activities.

(3) The duties of the qualified coordinator appointed under subsection (2)(a)(i) include

(a) informing employers and workers of the hazards created, and

(b) ensuring that the hazards are addressed throughout the duration of the work activities.

(4) The information required by subsection (2)(a)(ii) includes

(a) the name of the qualified coordinator appointed under subsection (2)(a)(i),

(b) a site drawing, which must be posted, showing project layout, first aid location, emergency transportation provisions, and the evacuation marshalling station, and

(c) a set of work procedures designed to protect the health and safety of workers at the workplace, developed in accordance with the requirements of this Regulation.

Note: The information required by subsection (4) is part of the overall health and safety program required by Part 3 of this Regulation (Rights and Responsibilities). See sections 24 and 25 of Part 2 of the *Workers Compensation Act* for the statutory requirements for coordination of multiple employer workplaces and the general duties of owners.

23.5 Safe work procedures

(1) The employer must identify the work activities or circumstances, including releases of gases, that have caused or may cause significant risk of injury or occupational disease to workers.

(2) The employer must analyze the risks arising out of the work activities or circumstances identified under subsection (1) and implement safe work procedures if the activities or circumstances create a hazard.

(3) The procedures implemented under subsection (2) must state the number of workers involved, the steps to be followed and the safety equipment required.

23.6 Control of static electricity

(1) When flammable liquids or finely divided materials which may produce a dust which is flammable or explosive are being transferred between containers, the containers must be

(a) in firm contact with each other, and

(b) continuously electrically bonded throughout the transfer to prevent accumulation of a static electric charge.

(2) If tanks, mixers or processing vessels are used for flammable or explosive substances, they must be electrically bonded and grounded while the contents are being transferred.

(3) A wellhead may be used as a ground

(a) for dissipating static electricity, and

(b) if tested and proved acceptable, for an electrical distribution system.

[Amended by B.C. Reg. 142/2017, effective August 1, 2017.]

23.7 Fire hazards

(1) Smoking is prohibited on or about a rig, within 25 m (80 ft) of the well bore and within 25 m (80 ft) of any well, production facility or gas processing plant.

(2) Open flames are prohibited within 25 m (80 ft) of the well bore whenever gas may be emitted from the well or any other source.

(3) If iron sulfide is removed from a tank

(a) the iron sulfide must be kept wetted down until safely disposed of, and

(b) other materials and equipment which are contaminated must be kept wetted down or kept in an inert atmosphere until cleaned.

23.8 Control of ignition sources

(1) If regular monitoring and hotwork permits are not in use to control ignition sources

(a) internal combustion engines must be shut down within the zone defined by the *BC Electrical Code* and the Drilling and Production Regulation as a Class 1 Division 2 or higher classification, unless their operation is integral to the work process, and

(b) diesel engines required to operate within the zone defined by the *BC Electrical Code* and the Drilling and Production Regulation as a Class 1 Division 2 or higher classification must have a positive air shutoff or other effective method for engine shut down.

(2) Mobile equipment powered by a diesel engine and used for maintenance or repair work on pressurized gathering, distribution and transmission equipment must have a positive air shutoff or other effective method of engine shut down.

23.9 Flare pits and flare lines

(1) Written safe work procedures must be implemented to ensure the safety of workers lighting or operating a flare tip, flare stack or flare line.

(2) Workers must be instructed in the application of the written work procedures required by subsection (1).

(3) Before workers enter a flare system danger area where the installation is temporary and remote ignition of the pilot is not feasible

(a) the flare line must be isolated, and

(b) contaminants in the flare pit area must be less than 20% of the lower explosive limit.

(4) The location of a flare pit or stack must not interfere with safe access to the work area.

(5) If feasible, there must be a continuous ignition source before flow to a flare pit or stack occurs.

23.10 Fire extinguishers

(1) Non-freezing fire extinguishers, other firefighting equipment and firefighting personnel must be provided as required by subsections (2), (3) and (4) and Table 23-1.

(2) The minimum requirements for a twin agent unit are

(a) 1 100 litres (250 imp gal) pre-mixed ATC foam solution at 6%,

(b) 680 kg (1 500 lbs) potassium bicarbonate dry chemical system,

(c) 30 m (100 ft) discharge hose, and

(d) two firefighting personnel.

(3) The minimum requirements for a continuous foam unit are

(a) 475 litres (100 imp gal) ATC foam concentrate,

(b) 680 kg (1 500 lbs) potassium bicarbonate dry chemical system,

(c) 1 900 litres (400 imp gal) per minute centrifugal certified fire pump with one 65 mm (2.5 in) discharge port, two 38 mm (1.5 in) discharge ports, and one 125 mm (5 in) suction port, and

(d) two firefighting personnel.

(4) Firefighting equipment must meet the requirements of *NFPA 10, Portable Fire Extinguishers, 1990 Edition.*

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

Table 23-1: Minimum requirements for firefighting equipment

Work activity	Number of extinguishers required	Type of extinguisher
Heavy hauler	1	20-BC
Hot oiler	2	20-BC
Seismic shot hole drill	2	20-BC
Drilling rig	4	40-BC
Service rig	4	40-BC
Battery operator	1	20-BC
Fluid hauler	1	40-BC
Service truck of 1 tonne capacity or more	1	20-BC
Any other commercial vehicle	1	5-BC
Any vehicle carrying explosives	2	4-A:40-B:C

Welder	1	10-BC
Well testing	2	10-BC
1 fracturing tank	1	Twin agent unit
2, 3 or 4 fracturing tanks	1	Continuous foam unit with 100 barrel water truck
5 or more fracturing tanks or greater than 40% methanol water fracturing	The fire hazard must be evaluated in accordance with current industry standards, and firefighting equipment and personnel must be provided as determined necessary by the evaluation.	

[Amended by B.C. Reg. 207/2021, effective December 1, 2021.]

23.11 Air operating systems

(1) Alcohol must not be added to air lines at the air intake side of a compressor.

(2) The air in the alcohol injection system must be bled down to atmospheric pressure before opening an air operating system to inject alcohol.

(3) If an air operating system supplies air for breathing purposes, the alcohol injection system must be isolated, the system purged of old air, and air purifying systems placed between existing piping and workers using the breathing system.

23.12 Pipelines, fittings and valves

(1) Pipelines, piping systems, fittings and valves must

(a) be designed, constructed and maintained to safely withstand the anticipated internal pressures and external loads,

(b) be restrained from undue horizontal, vertical or swinging motion, and

(c) if applicable, meet the requirements of

(i) *CSA Standard Z662-94, Oil and Gas Pipeline Systems*, or

(ii) *API Recommended Practice 520, Sizing, Selection, and Installation of Pressure-Relieving Devices in Refineries, Part I — Sizing and Selection (July 1990, 5th Edition)* and *Part II — Installation (November 1988, 3rd Edition),* or

(iii) *API Recommended Practice 521, Guide for Pressure-relieving and Depressuring Systems, dated November, 1990 (3rd edition),* or

(iv) *American Society of Mechanical Engineers (ASME) Standard B31.3-1993, Chemical Plant and Petroleum Refinery Piping*.

(v) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

(2) When a valve is to be disassembled

(a) it must be depressurized, purged or otherwise made safe, and

(b) written safe work procedures must be followed.

(3) Process control and power systems must be designed to operate on the gas being used.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.13 Hose connections

(1) Hoses and fittings must be of a design suitable for the type of service for which they are used.

(2) Quick connect fittings must be identified or have hardware controls to ensure connection only to the correct service.

(3) Quick connect fittings for breathing air service must be different from and not compatible for connection to any other service.

(4) Temporary piping and hose systems for hazardous fluids must be effectively protected from damage.

23.14 Pumps

(1) A positive displacement pump and attachments must have valves, pipes and fittings capable of withstanding the pump's maximum working pressure.

(2) A quick closing type valve must not be used on the discharge line of a positive displacement pump.

(3) A positive displacement pump must be protected against freezing.

(4) Except for a pumping wellhead, a pressure relief device must be installed on the discharge side of a positive displacement pump, but a valve must not be installed between them.

(5) For a wellhead utilizing a down-hole positive displacement pump, the employer must implement measures to prevent the pump from causing pressures that exceed the pressure rating of the system.

[Amended by B.C. Reg. 243/2006, effective January 1, 2007.]

23.15 Pressure relief device — when required

Repealed. [B.C. Reg. Reg. 312/2012, effective February 1, 2013.]

23.16 Pressure relief device — installation

Repealed. [B.C. Reg. Reg. 312/2012, effective February 1, 2013.]

23.17 Pipe racks

(1) Pipe racks and tubs must be placed on a level and firm surface.

(2) Pipe, tubular goods or similar round material must be prevented from accidentally rolling off a pipe rack.

(3) Spacers must be used between the layers of pipe or other material on a pipe rack.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.18 Handling pipe

(1) Pipes or tubular goods must be restrained from uncontrolled movement.

(2) Deck pins used to restrain pipes must

(a) be at least 45 cm (18 in) high, and extend beyond the centre line of the pipe closest to the pins, or

(b) if the pipe is tiered, extend one pipe diameter above the pipe closest to the pins.

(3) Deck pins are not required if specialized dunnage is used.

(4) Pipes or tubular goods must be adequately secured before restraining devices are removed.

(5) While pipe is being loaded, unloaded or transferred, workers must not be on top of an unsecured load, between the load and the pipe racks or tubs, or in any other area made hazardous by potential pipe movement.

(6) When pipe is being transferred between pipe racks, catwalks, or trucks, temporary supports or skids must be constructed, placed and anchored so that they will support the load placed upon them.

(7) When transferring drill collars, tubular goods or other similar materials which are not provided with shoulders, pick up subs or other appropriate pipe handling equipment must be used.

(8) A nubbin must not be used to pick up drill collars, tubular goods or similar materials unless the nubbin is equipped with a wire rope safety line and swivel for attachment to the elevator bails.

(9) A trailer used as a pipe rack during drilling, servicing or pipe salvaging must have a guard, along the full length of both sides of the trailer, designed and constructed to ensure that when a pipe is hoisted into the derrick, the lower end of the pipe will not roll off the trailer.

(10) Repealed. [B.C. Reg. 258/2008, effective January 1, 2009.]

(11) Pipes must be loaded on or unloaded from a truck one layer at a time.

[Amended by B.C. Reg. 258/2008, effective January 1, 2009.]

23.19 Kelly hose and safety lines

(1) Clamps and wire rope safety lines or chains must be used to fasten the kelly hose at the standpipe end to the derrick and at the swivel end of the swivel housing.

(2) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

(3) Shock hoses from pump to standpipe must be restrained by safety lines if they are subject to whipping.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.20 Catheads

The employer must ensure that workers do not use friction catheads after April 14, 1999.

23.21 Rigging up and tearing out

(1) The driver of a vehicle used for rigging up or tearing out equipment must not move the vehicle until signalled to move by a qualified signaller.

(2) The signaller must ensure that workers are clear of the path of the vehicle, load and load line.

(3) To prevent materials or equipment from rolling or sliding off a truck or trailer during unloading operations, load tie down devices must not be removed until the lifting slings and hoist line have been attached to the equipment or material that may slide or roll off, and slack in the hoist line and rigging has been taken up.

(4) A worker must not remain or ride on a load or part of a load being raised, lowered or moved.

(5) The movement of a load being raised or lowered must be controlled by

(a) a tag line long enough to ensure that the worker controlling it cannot be struck by the load, or

(b) where a helicopter is being used, by effective work procedures.

(6) A worker must not work, stand or pass

(a) under a suspended load,

(b) between the winch mechanisms and a load being winched, or

(c) in areas where the worker may be injured due to winch line or mechanism failure.

(7) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

(8) Winch mechanisms, lines, slings, hooks and fittings must be inspected thoroughly by the equipment operator

(a) before commencing work, and

(b) at such intervals as the nature of the work may require.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.22 Driver training

A vehicle driver in the oil and gas industry must, before operating a vehicle with a gross vehicle weight rating greater than 5 500 kg (12 000 lbs.),

(a) be certified in the applicable Energy Safety Canada driver training course acceptable to the Board, or

(b) have completed driver training providing skills and knowledge for safe driving equivalent to or better than those required by paragraph (a).

[Enacted by B.C. Reg. 258/2008, effective January 1, 2009.]
[Amended by B.C. Reg. 14/2019, effective June 3, 2019.]

23.23 Steep slopes

(1) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

(2) If material or equipment must be moved on steep terrain, a written plan must be prepared before snubbing or yo-yo operations are carried out.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.24 Roads

Roads, bridges and other structures forming part of the road system used by mobile equipment to transport workers, equipment or materials in connection with operations covered by this Part must meet the requirements for roads and road maintenance in Part 26 (Forestry Operations and Similar Activities).

23.25 Transporting liquids

Liquids must be transported in properly designed and constructed tanks or vessels.

23.26 Gauging

A tank which contains or may contain a fluid with hydrogen sulfide as a component must have an external means of gauging its contents, or if manual gauging or sampling is required, the worker doing the gauging or sampling must use a supplied air respirator meeting the requirements of Part 8 (Personal Protective Clothing and Equipment) for use in an IDLH atmosphere, and must be visually monitored by another worker equipped with an equivalent respirator and capable of effecting a rescue of the worker doing the gauging or sampling.

23.26.1 Liquefied gas used for purging or gauging operations or well stimulation

The employer must ensure that workers are protected from hazards that may be caused by the release of liquefied gas being used for purging or gauging operations or well stimulation.

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.27 Power line and upset hazards

The drill mast must be lowered if equipment is being moved and there is a danger of

(a) the mast contacting power lines or other overhead obstructions, or

(b) the unit losing stability.

23.28 Seismic drills

(1) A seismic drill must have an emergency engine stopping device which is clearly identified, within reach of the drill operator at the drilling position, and tested daily.

(2) Two workers must be present on the same shot hole while drilling.

23.29 Communications on vehicles

If a worker rides on a seismic line truck to perform work, there must be an effective means of communication between the driver and the worker.

23.30 Breakout tongs

Repealed. [B.C. Reg. 258/2008, effective January 1, 2009.]

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23.31 Size of work area

The owner must ensure that the work area is sized, constructed and laid out so that

(a) all the required equipment may be safely moved and operated, and

(b) emergency response activities may be carried out.

(c) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

23.32 Inspection and repair

(1) Each drilling and service rig must be inspected and repaired in accordance with the following applicable standards published by the Canadian Association of Oilwell Drilling Contractors:

(a) *Recommended Practice 1.0, for Drilling Rigs, Mast Inspection and Certification, January 1, 1994;*

(b) *Recommended Practice 2.0, for Drilling Rigs, Overhead Equipment Inspection and Certification, January 1, 1994;*

(c) *Recommended Practice 3.0, for Service Rigs, Inspection and Certification of Masts, January 1, 1994;*

(d) *Recommended Practice 4.0, for Service Rigs, Overhead Equipment Inspection and Certification, January 1, 1994;*

(e) *Recommended Practice 1.0A, Addendum for Drilling Rigs, Substructure Inspection and Certification, September 12, 1995.*

(2) Inspections and repairs must be recorded in a Canadian Association of Oilwell Drilling Contractors log book or equivalent log acceptable to the Board.

(3) The log must be available on site for review by an officer.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.33 Rig moves

(1) The raising and lowering of a derrick must be done under the direct supervision of the rig manager or other qualified person.

(2) When hoisting a mast section, rigging must be attached to designated lifting points only.

(3) Lifting points must be clearly marked on each mast section of the derrick.

23.34 List of weights

A master list of the weight of rig components must be kept on site.

23.35 Prohibited work areas

Except for the operator at the controls, workers are prohibited from being on, in or beneath a derrick being raised, lowered or telescoped.

23.36 SCBA

On each drilling and service rig there must be a minimum of 4 self-contained breathing apparatus in good working order, 2 together in each of 2 separate opposite locations, so that 2 apparatus are always accessible regardless of wind direction.

23.37 Blowout preventers

(1) When installing a blowout preventer

(a) the preventer must be effectively restrained while it is being aligned, and

(b) workers are prohibited from being located where they may be injured if the preventer swings or drops.

(2) When removing a blowout preventer, 2 opposing anchor lines must remain in position until

(a) the lifting sling is attached to the preventer,

(b) the slack in the hoisting line and rigging is taken up, and

(c) the draw works brake handle is tied down.

23.38 Spudding in

Spudding in must not start until

(a) all guards are in place,

(b) all platforms, stairways and handrails are installed and securely fastened,

(c) the escape line, anchors and safety buggy are installed and inspected, and

(d)all connecting pins are secured against dislodgment.

23.39.1 Emergency escape systems

A drilling or service derrick must have an emergency means of escape from the racking board that complies with section 23.39.2 or 23.39.3.

[Enacted by B.C. Reg. 258/2008, effective January 1, 2009.]

23.39.2 Emergency escape system 1

(1) A drilling or service derrick must have a specially rigged and securely anchored line as an emergency means of escape that

(a) provides a ready means of escape from the racking board,

(b) consists of a wire rope not less than 13 mm (1/2 in) diameter,

(c) has a length twice the vertical distance between the ground and the point at which it is attached to the derrick,

(d)is effectively anchored and able to withstand a load of 13.3 kN (3 000 lbs), and

(e) is kept free of obstructions.

(2) Equipment must not be placed, and vehicles must not pass, under the last 15 m (50 ft) of the escape line.

(3) A safety buggy of a design acceptable to the Board must be installed and operated on the escape line.

(4) The safety buggy required under subsection (3) must be

(a) kept at the racking board,

(b) provided with an effective brake and means to prevent the trolley from coming off the escape line, and

(c) inspected by a qualified person at least once a week.

(5) The escape line must be tensioned so that a person seated in the safety buggy will touch the ground at a safe distance from the derrick, not less than 6 m (20 ft) from the ground level anchor.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]
[Amended by B.C. Reg. 258/2008, effective January 1, 2009.]

23.39.3 Emergency escape system 2

(1) A drilling or service derrick must have an emergency means of escape that

(a) is available for use at the racking board whenever a person is working at that level during drilling or well servicing operations,

(b) is able to simultaneously and safely transport all persons from the racking board level, either individually or as a group, to a location at ground level removed from the source of danger,

(c) shields the persons using the system from any danger coming from the well bore during the descent or separates the persons using the system from such danger during the descent,

(d) has a means to keep the persons using the system from falling out of or off of the emergency means of escape during descent, and

(e) has a means, either automatic or manually controlled, to control the rate of descent to a speed that minimizes the risk of injury to the persons using the system when they near ground level.

(2) The placement of equipment and the movement of vehicles in the area under the emergency means of escape required under subsection (1) must be controlled so as to ensure the emergency means of escape can be safely used.

(3) The emergency means of escape required under subsection (1) must be inspected and tested in accordance with the manufacturer's instructions

(a) each time the derrick is erected, before a person works at the racking board during drilling or well servicing operations, and

(b) at least once each month when the rig is being used for drilling or well servicing operations and a person is working at the racking board.

(4) Each person assigned to work at the racking board during drilling or well servicing operations must

(a) have demonstrated proficiency in the use of the type of emergency escape system installed on the rig, and

(b) participate in drills and receive retraining as necessary to ensure ongoing proficiency in the use of the escape system installed on the rig.

[Enacted by B.C. Reg. 258/2008, effective January 1, 2009.]

23.40 Draw works controls

(1) If dual purpose controls are used for automatic catheads, a locking device must be installed to prevent one cathead from being accidentally engaged while the other is operating.

(2) The function of each draw works control must be clearly identified.

(3) If a control may become engaged because of accidental contact with lines or other equipment, the control must be suitably guarded.

23.41 Stabbing boards

(1) A stabbing board must be used by a worker located above the derrick floor during the running of casing or tubing, or well servicing operations.

(2) A wooden stabbing board must

(a) be fitted with expanded metal or wire rope fastened to the underside and along the full length of the board,

(b) have each end of the board secured to the derrick by a wire rope of not less than 13 mm (1/2 in) diameter, or chain of at least equivalent strength, and

(c) be at least 30 cm (12 in) wide.

(3) A metal platform of equal width and strength may be used in place of a wooden stabbing board.

(4) At the stabbing board, a personal fall protection system must be attached to

(a) wire rope with a breaking strength of not less than 40 kN (9 000 lbs) stretched across the derrick at a location approximately 2 m (7 ft) above the stabbing board,

(b) a cross-member of the derrick structure at a point approximately 2 m (7 ft) above the stabbing board, or

(c) a solid support secured across the derrick at a location approximately 2 m (7 ft) above the stabbing board.

23.42 Derrick enclosures

(1) Engine rooms, pump houses, derrick floors and derrickhand platforms must be enclosed to a sufficient height to provide protection against the weather.

(2) When erecting, maintaining or dismantling derrick enclosures

(a) safe work procedures must be implemented, and

(b) where practicable, a safe work platform must be provided.

(3) Workers are prohibited from straddling or climbing onto prefabricated wall panels during erection, maintenance or dismantling of derrick enclosures.

(4) Safe exits must be provided directly to the outside on each of at least 3 sides of the derrick floor enclosure.

(5) The pump house enclosure must have at least 2 doors, opening in different directions to the outside.

(6) Exit doors of a derrick enclosure and the doors of the doghouse must

(a) open outward from the derrick floor, and

(b) not be held closed with a lock or outside latch when workers are employed on the derrick floor.

23.43 Ventilation openings

(1) Before commencing drill stem tests, swabbing, bailing, or displacement with gas or oil

(a) derrick enclosures must be altered to provide openings at least 1.8 m (6 ft) high and 2.4 m (8 ft) wide on opposite sides above, and on 2 sides below, the derrick floor, or

(b) adequate mechanical ventilation or monitoring must be provided.

(2) If it is not practicable to provide openings as specified in subsection (1)(a), several openings must be made providing a total area of at least of 4.5 sq m (50 sq ft) on each side.

(3) If mechanical ventilation is used

(a) it must be installed on the mud tank side,

(b) it must be able to completely change the air in the substructure every 2 minutes, and

(c) at least one opening must be provided in the front of the substructure to allow for adequate inflow of makeup air.

(4) During cold weather, ventilation procedures must not compromise the well control systems.

23.44 Pits and tanks

(1) Any pit or tank used for the circulation of flammable material must be isolated from sources of ignition.

(2) If a pit or tank is enclosed, adequate mechanical ventilation must be provided.

23.45 Ladder platforms

(1) Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]

(2) A personal fall arrest system meeting the requirements of Part 11 (Fall Protection) may be used in place of a ladder safety system where such ladder system is required by the standard referenced in Part 13 (Ladders, Scaffolds and Temporary Work Platforms).

(3) Ladder platforms must be located as follows:

(a) on a triple-stand derrick, 2 or more between the floor and the derrickhand platform, and one or more between the derrickhand platform and the crown;

(b) on a double-stand derrick, one or more between the floor and the derrickhand platform;

(c) on a single-stand derrick, one platform at the level of the derrickhand platform;

(d) at the crown of each drilling rig.

(4) The platforms required by subsection (3) must, as far as practicable, be equally spaced, but not more than 9 m (30 ft) apart.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]
[Amended by B.C. Reg. 422/2004, effective January 1, 2005.]

23.46 Derrick floor access stairways

(1) On each drilling and service rig, a stairway must be installed beside the ramp and must extend from the ground to the derrick floor.

(2) The catwalk must be provided with a stairway at the outer end.

23.47 Guardrails

(1) Guardrails installed on the walkways and platforms of mud tanks must have

(a) a horizontal top rail not less than 90 cm (36 in) nor more than 1.1 m (42 in) high, and

(b) posts or uprights spaced not more than 3 m (10 ft) apart.

(2) Guardrails must be installed on

(a) the outer perimeter of all mud tank hinged wing platforms or walkways, and

(b) both sides of walkways located over mud tanks.

(3) Wire rope of not less than 10 mm (3/8 in) diameter, or chain of equivalent strength, may be substituted for guardrails on mud tank walkways if the ropes or chains are rigged and maintained at the required height and kept taut.

(4) Floor openings, elevated walkways and platforms must have toeboards meeting the requirements of Part 4 (General Conditions) if the height exceeds 3 m (10 ft) above grade.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.48 Hoisting lines

A minimum of 5 wraps of the hoisting line must be maintained on the drum of the draw works to eliminate strain on the drum line anchorage.

23.49 Travelling blocks

(1) Travelling blocks, hooks, elevators, elevator links and other units of travelling equipment on a rig must be free of projecting bolts, nuts, pins or parts.

(2) If a travelling block is being used on a rig, an upward travel limiting device must be provided to prevent the travelling block from contacting the crown block or structure.

(3) The upward travel limiting device required by subsection (2) must

(a) operate by disengaging the hoisting drum from its power source and applying the hoisting drum brake, and

(b) be tested on each shift.

23.50 Hand guards

A worker must not handle moving hoisting lines, unless using a secured spooling device from a safe location.

23.51 Riding hoisting equipment

(1) A worker must not ride the travelling block hook, or elevators, nor slide down any pipe, kelly hose, cable or rope line.

(2) In an emergency an injured worker may be lowered from the derrick by means of the travelling block or a tugger if the rotary table is stopped, and a qualified worker operates the controls.

(3) If the hoisting equipment to be used under subsection (2) is not rated by the hoist manufacturer for hoisting personnel, training with the equipment must be done without suspending or supporting a person with the load line of the hoisting equipment.

[Amended by B.C. Reg. 258/2008, effective January 1, 2009.]

23.52 Guards

(1) Guards of sufficient strength to contain broken parts must be installed at the draw works and rotary table drives of each rig.

(2) Substantial guards of sufficient height must be installed in front of the hoisting drums on a rig to prevent workers from contacting them.

(3) If headache-posts on a rig rotate, the top and bottom ends must be guarded to contain the post should the shaft fracture.

23.53 Crown blocks

If bumper blocks are attached to the underside of the crown beams on a rig, a safety cable or its equivalent must be

(a) fastened along the full length of the bumper blocks, and

(b) secured at both ends to the derrick.

23.54 Securing fingers

The unsupported ends of derrickhand platform fingers must be connected to the platform frame by wire rope not less than 13 mm (1/2 in) in diameter, or chain of at least equivalent strength.

23.55 Counterweight safety lines

A counterweight above the derrick floor which is not fully enclosed or running in permanent guides must be secured to the derrick frame by a wire rope safety line that is not less than 16 mm (5/8 in) in diameter, and of a length that will prevent the counterweight from coming within 2.4 m (8 ft) of the rig floor.

23.56 Weight indicators

A drilling rig must have a reliable load weight indicator, and if it is hung above the floor it must be secured by a wire rope or chain safety line.

23.57 Brakes

(1) The brakes on the draw works of a drilling rig, and on a service rig used for drilling, must be tested at the beginning of each crew shift, and inspected at weekly intervals.

(2) A rig engaged in drilling operations must be equipped with an automatic feed control.

(3) If a hold down chain is used to secure the draw works brake handle, the chain must be attached to the brake handle in a manner which prevents accidental disengagement of the chain.

(4) Loss of brake pressure due to cooling of the brake drum mechanism must be prevented.

(5) The operator of the draw works must not leave the controls unattended while the hoisting drum is in motion, except when drilling.

23.58 Drill pipes, collars and tubing

(1) Whenever drill pipes, drill collars or tubing are racked in a derrick, provision must be made for the complete drainage of any fluids or gases in the stands.

(2) Before drill pipe, drill collar, tubing or casing is run in a well bore, it must be free from ice plugs or other obstructions.

(3) Except while being moved, drill pipes, collars, tubing, casing and rods racked in a derrick must be secured at the top end by means of tieback ropes or equivalent devices to prevent them from falling out of or across the derrick.

23.59 Mud cans

Whenever a wet joint, or stand of pipe or tubing, is being unscrewed and disconnected above the derrick floor, a mud can must be used to convey any liquids through a pipe to the mud tank or sump.

23.60 Rotary tongs

Rotary tongs must have

(a) a primary safety device to prevent uncontrolled movement of the tongs, and

(b) a secondary safety device that will activate if the primary device fails.

23.61 Rotary table

(1) If visibility on the rig floor is obscured, workers must not work there while the rotary table is in motion.

(2) Hoses, lines or chains must not be operated or handled near a rotary table while it is in motion.

(3) The rotary table must not be engaged until all workers are clear of the rotary table.

23.62 Fuel storage

Except for fuel in the primary supply tanks of operating equipment, gasoline or other liquid fuel must not be stored within 25 m (80 ft) of a well.

23.63 Guylines

(1) Derrick guylines must be secured to adequate ground anchors.

(2) Derrick guylines and ground anchors must be installed according to the requirements of the manufacturer, a professional engineer, or the *American Petroleum Institute Recommended Practice RP 4G-1992, Maintenance and Use of Drilling and Well Servicing Structures, First Edition, January 1, 1992.*

(3) Permanent ground anchors must be designed and installed so they will be effective all year round.

(4) Temporary ground anchors must be pull tested before initial use and, if they continue to be used, tested annually and whenever they may have been affected by seasonal changes.

(5) The manufacturer's specifications for the correct number of guylines and spacing must be legibly marked on a plate affixed to the derrick, or on a specification sheet posted at the rig.

(6) The prime contractor or owner must ensure that documentation is available on site showing that ground anchors meet the requirements of this Part, and that such documentation is signed by the person responsible for the adequacy of the anchors.

[Amended by B.C. Reg. 14/2019, effective June 3, 2019.]

23.64 General requirements

(1) Drill stem testing procedures must conform to *Alberta Recommended Practices for Well Testing and Fluid Handling, ARP 4.1 Drill Stem Testing, June, 1993*.

(2) During drill stem testing

(a) motors and engines or other sources of ignition not required for the operation must be shut off, and

(b) motor vehicles must not be permitted within 25 m (80 ft) of the well bore.

(3) The rig manager, testing supervisor, and if required, representatives of other contractors doing work must be present to ensure that

(a) workers are trained to carry out their responsibilities during the test, and

(b) the equipment supplied is in good repair and will function as designed.

(4) If liquids are recovered during drill stem tests

(a) the liquids must be reverse circulated from the drill pipe,

(b) prior to reverse circulating, drill pipe may be pulled from the hole using test plugs on every joint of drill pipe disconnected, until well fluids are encountered at the surface, and

(c) if reverse circulation is not practicable due to a failure of the pump out sub, the drill pipe may continue to be tripped out of the hole with extreme caution, using test plugs and a mud can.

(5) If test fluid recovery is encountered during darkness

(a) the liquids recovered must be reverse circulated, and

(b) if reverse circulation is not practicable due to failure of the pump out sub, additional drill pipe must not be pulled and disconnected until daylight.

(6) Whenever oil, water or gas has been encountered during drill stem testing,

(a) tests for the presence of hydrogen sulfide must be done, and

(b) if hydrogen sulfide is found, the sour fluids encountered must be reverse circulated to a vented tank not less than 50 m (165 ft) from the well, or to a flare pit.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.64.1 Snubbing operations

A snubbing operation must be carried out in accordance with recognized industry safe work practices.

[Enacted by B.C. Reg. 258/2008, effective January 1, 2009.]

23.65 Swabbing at night

When swabbing at night

(a) auxiliary lighting providing a minimum illumination of 54 lux (5 fc) measured 50 cm (20 in) above the travelled surface must be provided,

(b) rig lighting which is not explosion proof must be turned off,

(c) the sandline depthometer must be used to supplement the sandline flags,

(d) the sandline flags must be illuminated and acid resistant,

(e) adequately illuminated wind direction indicators must be placed at appropriate locations around the site, and

(f) a wellsite supervisor must remain on site at all times.

23.66 Gauging

A swabbing tank must have an external means of gauging its contents.

23.67 Disposal of fluids

(1) Fluids used in or resulting from swabbing must be piped directly through a degasser to a battery, skid tank, mobile trailer tank or tank truck, located not less than 50 m (165 ft) from the well bore.

(2) If fluids used in or resulting from swabbing are being piped into a tank truck the tank truck engine must be shut off, and the driver must not remain in the truck cab.

23.68 Air intake and exhaust

During well servicing

(a) the air intake and exhaust of the pump motor must be located not less than 6 m (20 ft) from the rig tank while the pump is circulating hydrocarbons, and

(b) the tank truck must be located on the far side of the rig tank from the well bore and at a distance not less than 6 m (20 ft) from the rig tank during loading and unloading.

23.69 Flow piping systems - integrity assurance program

(1) The employer must develop and implement a program for the purpose of ensuring the integrity of the flow piping systems at the worksite.

(2) In fulfilling the requirements of subsection (1), the employer must consider the conditions under which each flow piping system may operate, including corrosion factors and fluctuating temperatures and pressures, and the program must include provision for the following elements:

(a) routine inspections, non-destructive testing and pressure testing of piping and other component parts of each flow piping system, including setting out in writing, for each type of part to be inspected and tested,

(i) the inspection and testing procedures,

(ii) the frequency of inspection and testing and how the frequency is to be determined,

(iii) the criteria for rejection of a type of part and its removal from service, and

(iv) the method of determining how frequently a type of part is to be replaced, including the basis for replacement;

(b) preparing, updating and making readily available at the worksite an up-to-date document, relating to the inspections and testing referred to in paragraph (a), that identifies each part that has been inspected and tested, and sets out, for that part,

(i) the inspection and testing procedures followed,

(ii) the results of the inspection and testing, and

(iii) if a part has been rejected, the rejection criteria applied;

(c) periodic reviews and updates of the program;

(d) a system of preparing and retaining records in relation to each element of the program.

(3) The employer must assign to a qualified person responsibility for administration of the program referred to in subsection (1).

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.69.1 Flow piping systems - selection, installation and operation

The employer must ensure that

(a) each flow piping system at the worksite is

(i) selected based on the manufacturer's specifications, having regard to the system's anticipated operation, and

(ii) installed and operated in accordance with the manufacturer's instructions and specifications, and

(b) copies of all of the manufacturer's instructions and specifications in relation to the flow piping systems are readily available at the worksite.

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.69.2 Flow piping systems - restraint systems

(1) The employer must ensure that each flow piping system at the worksite is restrained by an engineered restraint system that is designed and manufactured

(a) to be used for the purpose of safely restraining the flow piping system, and

(b) to withstand the forces that may be encountered if the flow piping system fails.

(2) If a restraint system has been manufactured by a commercial manufacturer, the employer must ensure that the restraint system is installed and anchored in accordance with the instructions and specifications of that manufacturer.

(3) If a restraint system has been manufactured by the employer or another person who is not a commercial manufacturer, the employer must ensure that

(a) engineering documentation, including technical specifications and instructions for use, has been prepared and signed by the person responsible for demonstrating that the restraint system has been designed and manufactured as described in subsection (1),

(b) the restraint system is installed and anchored in accordance with that engineering documentation, and

(c) a copy of that engineering documentation is readily available at the worksite.

(4) In addition to meeting the requirements of subsection (2) or (3)(b), the employer must ensure that each restraint system is anchored at both the wellhead end and the supply vehicle end or pumping unit end, but a restraint system need not be anchored to the wellhead or to the supply vehicle or pumping unit.

(5) The employer must ensure that temporary ground anchors that are part of a restraint system are pull tested before initial use and, if they continue to be used, that they are pull tested annually and whenever they may have been affected by seasonal changes.

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.69.3 Flow piping systems - other requirements

(1) If the pressure of a flow piping system at the worksite may exceed 2 000 kPa (290 psi) during well stimulation and similar operations, the employer must ensure that

(a) those operations of the flow piping system are conducted by remote control,

(b) unauthorized workers do not enter the area between the point of discharge and the wellhead, and

(c) before the operations are started, warning signs are posted in the area of the operations stating "DANGER, NO UNAUTHORIZED WORKERS ALLOWED IN THIS AREA" or other similar language.

(2) If the pressure of a flow piping system at the worksite may exceed 3 000 kPa (435 psi), the employer must ensure that

(a) the flow piping system connections are welded or flanged or are hammer unions, and

(b) if the only connection on the wellhead is a threaded connection that is integral to the wellhead, the component parts of that threaded connection are compatible with each other.

(3) The employer must ensure that each flow piping system at the worksite is completely depressurized before a leak in a connection or fitting in the flow piping system is corrected.

(4) The employer must ensure that a person does not hammer on a pressurized flow piping system at the worksite.

(5) If workers are using liquefied gas for well stimulation, the employer must ensure that the unit that supplies the liquefied gas and the unit that pumps the liquefied gas are positioned so that the valve controls of each of those units are on the sides of each of those units that are opposite from the piping that supplies the liquefied gas to the well.

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.70 Piping, hoses and valves

(1) Only metal piping, or flexible hose designed for high pressure service, may be used between a service pump and the wellhead, and a check valve must be installed at the wellhead end of the piping.

(2) A bleedoff valve must be installed between the check valve and the wellhead.

[Amended by B.C. Reg. 142/2017, effective August 1, 2017.]

23.71 High risk fluids

If it is necessary to replenish the pumping unit supply with high risk fluids, the filling line from an auxiliary tank must be piped directly to the suction end of the pump, and not into the pumper truck.

23.72 Pressure testing requirements

(1) The employer must ensure that, before a well service operation at the worksite commences, piping, pumps, valves, fittings and wellheads that are to be used in the operation have been

(a) hydraulically pressure tested, or

(b) if hydraulic pressure testing is not practicable, pressure tested with an inert gas,

to a pressure that is at least 10% above the maximum operating pressure of the well service operation anticipated by the well owner but not above the manufacturerâ€™s maximum pressure rating of the piping, pumps, valves, fittings or wellheads.

(2) The employer must ensure that, before a well testing or flowback operation at the worksite commences, the flow piping system from the wellhead to the first pressure control choke has been

(a) hydraulically pressure tested, or

(b) if hydraulic pressure testing is not practicable, pressure tested with an inert gas,

to a pressure that is at least 10% above the maximum operating pressure of the well testing or flowback operation anticipated by the well owner but not above the manufacturer's maximum pressure rating of the piping, pumps, valves, fittings or wellheads.

(3) The employer must ensure that documentation of the results of the testing required under subsections (1) and (2) is readily available at the worksite.

(4) The employer must ensure that, if

(a) nitrogen is being used in well stimulation, and

(b) the flow piping system that supplies the nitrogen to the well is pressure tested with nitrogen,

the nitrogen treating line is connected to the main line as close as practicable to the well.

(5) The employer must ensure that, before each flow piping system at the worksite is pressurized with low flash point hydrocarbons, the air has been purged from the flow piping system.

[Enacted by B.C. Reg. 142/2017, effective August 1, 2017.]

23.73 Hot oiling

The vent line used in hot oiling operations must discharge a minimum of 10 m (33 ft) from sources of ignition.

23.74 Bonding and grounding

During drill stem testing, swabbing, cementing, well servicing or stimulation, electrical continuity between items of equipment must be maintained and the entire system must be grounded.

23.75 Preventing ignition

Unless the system is designed and constructed to prevent flashback, sources of ignition in the flare pit and surrounding areas must be extinguished while a vessel is being completely drained to the flare pit and the pressure in the vessel is 35 kPa (5 psi) or less.

23.76 Blanking of lines

Pipes connecting a vessel to a flare system must be blanked off and hoses disconnected

(a) before work is performed within the vessel, and

(b) during treater refilling operations.

23.77 Retaining walls and diked areas

(1) Retaining walls and diked areas must be provided with safe access.

(2) A worker must not enter a diked area unless

(a) effective measures, including testing, have been taken to protect workers if hydrogen sulfide may be present,

(b) testing for flammable gases and vapours, oxygen deficiency and harmful air contaminants is done if there are leaks or spills that may present a hazard to workers, and

(c) testing for flammable gases and vapours is done before hot work takes place.

(3) Testing must be done for hydrogen sulfide before entry to any diked area where sour fluid is stored.

23.78 Truck loading and unloading

(1) A tank truck must be electrically bonded and grounded when loading and unloading hydrocarbons.

(2) The ground conductor required by subsection (1) must remain effectively attached until all other connections have been removed.

(3) Servicing or maintenance must not be carried out on a tank truck when loading or unloading hydrocarbons except for required greasing of the pump.

(4) Chocks must be used to secure a tank truck while loading and unloading hydrocarbons.

(5) Other vehicles must not be started or shut off within 8 m (25 ft) of a tank truck containing flammable liquids while it is being connected or disconnected.

(6) If a tank truck is being loaded through a dome hatch and it is necessary to observe the fluid level

(a) a platform must be provided for the loader,

(b) shutoff controls must be located at the platform,

(c) illumination in accordance with the requirements of Part 4 (General Conditions) must be provided during hours of darkness, and

(d) the loading spout must extend to within 15 cm (6 in) of the bottom of the tank.

[Amended by B.C. Reg. 222/2021, effective December 1, 2021.]

23.79 Pressure relief

If a tank truck tank is pressurized as part of the unloading process

(a) written safe work procedures must be provided for and followed by the operator,

(b) the truck must be fitted with a pressure relief valve, regulator, pressure gauge and a mechanism for quickly shutting off supply to the tank, and

(c) controls must be readily accessible to the operator.

23.80 Venting of trucks

Tank trucks or loading facilities must have a system for protecting workers from hydrogen sulfide if it is present.

23.81 Wrenches

(1) Valve wrenches must be constructed to an adequate engineered design.

(2) Snipes or extensions must not be applied to valve or pipe wrenches, except by design.

23.82 Inerting

The requirement to control ignition sources during inerting operations in Part 9 (Confined Spaces) does not apply to the workplaces covered by this Part.

23.83 Safety harnesses

(1) If it is not practicable for a worker entering a confined space to use a lifeline due to internal piping or other obstructions, the worker must wear a full body harness.

(2) If a lifeline is not used, 2 workers must be equipped with respirators and capable of effecting a rescue if required, and stationed immediately outside the entrance to the confined space.

[Amended by B.C. Reg. 312/2010, effective February 1, 2011.]

23.84 Welding precautions

(1) After a vessel or tank has been cleaned, and before further work is performed,

(a) the vessel or tank must be ventilated and tested for toxic and flammable substances and oxygen deficiency, and

(b) repeat tests must be made while work is in progress, as required by Part 9 (Confined Spaces).

(2) If necessary to ensure the safety of workers, steam or an inert gas must be used to purge flammable substances from tankers, tanks, vessels or piping prior to any cutting or welding operations.

(3) Services must be provided through the top accessway of a tank or vessel or, if this is not practicable, the services must be protected.

(4) Equipment or fire extinguishers must not cause a hazard to workers in the tank or vessel.

23.85 Openings

Primary entry ways and ventilation openings must be effectively secured in the open position before entry into a confined space is allowed.

23.86 Electrical equipment

Electrical equipment used in confined spaces must be supplied with power through an approved ground fault circuit interrupter.

23.87 Oxygen powered resuscitators

Repealed. [B.C. Reg. 348/2003, effective March 30, 2004.]

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23.88 Standards

(1) Gas sample containers must meet the requirements of *CSA Standard CAN/CSA-B339-88 Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods*.

(2) Gas sample containers must be used in accordance with *CSA Standard CAN/CSA-B340-M88, Selection and Use of Cylinders, Spheres, Tubes, and Other Containers for the Transportation of Dangerous Goods, Class 2*.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

23.89 Safe practices

(1) Repealed. [B.C. Reg. 381/2004, effective January 1, 2005.]

(2) Valves must be screwed directly into gas sample containers.

(3) Plugs must be used in the gas sample container valves.